

Work Order ID 97447***97447***

Page 1

Item ID: D4202-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Spacer

Start Date: 2/19/2013 Start Qty: 100.00

100

Cust Item ID:

Required Date: 2/22/2013 Req'd Qty: 100.00

100

Customer:

Reference:

Approvals: Process Plan: *WKF*Date: *13-2-19*

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

Draw Nbr

Revision Nbr

D4202

C

100

0.00

100

Hardinge CNC LATHE SMALL

Hardinge

Memo

0.00

Hardinge CNC Lathe Small

1- Machine as per Folio FB015

FOLIO REV: *AA*DWG REV: *C*

DO NOT CHAMFER OUTSIDE DIA

2- Deburr

*13-02-20**100**Ø*

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.00

Quality Control

*13-02-20**100**Ø*

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Tuesday, February 19, 2013 3:21:22 PM

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Item Name: Spacer

Stop ***NS2***

Start Date: 2/19/2013 Start Qty: 100.00

100

Cust Item ID:

Required Date: 2/22/2013 Req'd Qty: 100.00

100

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.00

Quality Control

24 B-2-20

100 d

130

Outsource process - Heat Treat

0.00

130

Outsource1

Memo

0.00

Outsource process - Heat Treat

HEAT TREAT AS PER DWG D4202

P/O: 19178

metcer.

C2 13102/26 (100)

140

Receive & Inspect for Damage & Mat'l Certs

0.00

140

Packaging

Memo

0.00

Packaging

43/3/14 (100)

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Tuesday, February 19, 2013 3:21:22 PM

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Revision ID:

Item Name: Spacer

Stop ***NS2***

Start Date: 2/19/2013 Start Qty: 100.00

100

Cust Item ID:

Required Date: 2/22/2013 Req'd Qty: 100.00

100

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

QC6- Inspect dimensions to drawing

0.00

150

QC

Memo

0.00

Quality Control

(100) 13-03-14 DAS 09-5

190

Identify as per dwg & Stock Location: LG

0.00

190

Packaging

Memo

0.00

Packaging

STOCK IN SKIDTUBE CELL

100 13-03-15

200

QC21- Final Inspection - Work Order Release

0.00

200

QC

Memo

0.00

Quality Control

13/3/18

13-03-15

Picklist Print

Tuesday, February 19, 2013 3:21:21 PM

Page 1

Work Order ID: 97447

Parent Item: D4202-1

Parent Item Name: Spacer

Start Date: 2/19/2013

Required Date: 2/22/2013

Start Qty: 100.00

Required Qty: 100.00

Comments: IPP REV:A NEW ISSUE 10-12-07 JLM VERIFIED:DD IPP REV:B AS PER REV B 11-04-05 JLM VERIFIED BY:DD IPP Rev:C 11.12.19 PER DWG REV.C DD verf:EC

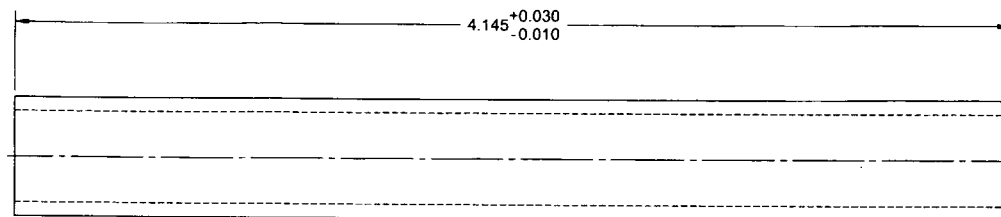
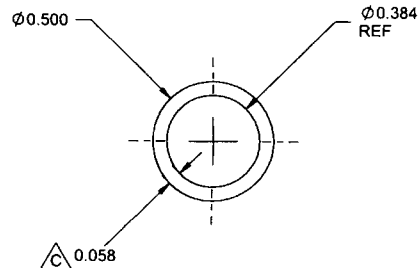
| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| M6061T6T0.500W.058 6061-T6 RD Tube .500 x.058W | | Purchased | No | | | 100 | f | 146.8200 | 0.35 | 36.842105 | 37.667 | 2-13-02-20 | |

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| MAT014 | 146.82 | |
| 117084 | 46.494 | |
| 117890 | 0.2 | |
| 119160 | 3.828 | |
| 120935 | 57.874 | |
| 122051 | 30.424 | |
| 122312 | 8 | |

37.667

FIRST ARTICLE INSPECTION CHECKLIST

| Rev | Date | Change | Revised by | Approved |
|-----|----------|----------------------------------|------------|----------|
| A | 11.01.20 | New Issue | KJ | |
| B | 11.04.05 | Dimensions updated per Dwg Rev B | KJ | |
| C | 12.07.31 | Dimensions updated per Dwg Rev C | KJ | |



D4202-1 SPACER

RELEASED
2011-12-14

NOTES:

- 1) MATERIAL: 6061-T4/T42 ALUMINUM TUBING PER WW-T-700/6, AMS 4081, OR ASTM B210 / B221 / B241
REF DART SPEC M6061T4T0.500W.058
OR
6061-T6/T62 ALUMINUM TUBING PER WW-T-700/6, QQ-A-200/8, AMS 4080 / 4082, OR ASTM B210 / B221 / B241
REF DART SPEC M6061T6T0.500W.58
HEAT TREAT TO -T4/-T42 CONDITION. MIN UTS = 30 KSI (60 HREW MIN)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.03 lbs

| | | | | |
|------------|----------|---|----|----------|
| DESIGN | C | 6061-T4 WAS 6061-T6, 0.058 WAS 0.049 | CP | 11.12.13 |
| DRAWN | B | 0.049 WAS 0.058. REASON: FACILITATE MFG | MB | 11.03.22 |
| CHECKED | A | NEW ISSUE | CP | 10.09.22 |
| MFG. APPR. | REV. | DESCRIPTION | BY | DATE |
| APPROVED | | | | |
| DE APPR. | | | | |
| DATE | 11.12.13 | | | |

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D4202** REV. C
TITLE **SPACER** SCALE NTS

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NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT
WRITTEN PERMISSION FROM DART AEROSPACE LTD

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

| BON DE TRAVAIL order | CHARGEMENT load |
|-------------------------|--------------------|
| 184123 | 1 |

CLIENT / customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

1

| COMMANDE DU CLIENT customer-po | BON DE LIVRAISON DU CLIENT customer shipper no. | MATÉRIEL material | CODE DE TRAITEMENT mat'l heat code | NUMÉRO DE LOT lot number |
|-----------------------------------|--|----------------------|---------------------------------------|-----------------------------|
| PO19178 | | AL-6061 | | |

SPÉCIFICATIONS DU PROCÉDÉ processing specifications

SOL ANNEAL
SINGLE AGING TO CONDITION T42

| EXIGENCE / requirement | SPÉCIFICATIONS / specified | TESTS EXÉCUTÉS / performed | RÉSULTATS DE TESTS / results |
|------------------------|----------------------------|----------------------------|------------------------------|
| CONDUCTIVITY | 35 - 43 %IACS | 35 (60kHz) | 37.0 - 39.0 %IACS |
| HARDNESS | 60 HREW MIN | 35 | 68.0 - 70.5 HREW |

| QUANTITÉ quantity | POIDS weight | DESCRIPTION DES PIÈCES parts description |
|----------------------|-----------------|--|
| 346 | 8 | D4202-1 (100) SPACER REFERENCE 97447 (6) D4686-1 SPACER REFERENCE 97772 (240) D4720-1 SPACER REFERENCE 97123 CONTENANT; 1 BOÎTE DE CARTON |

| Operation | Temp. spécifiée Specified Temp | Temps de trempe Spécifié Specified Soak Temp | Atmosphère | Carbone Carbon Potential | Q-Media Q-Temp | Four # Furnace # | Date Départ Start Date | Heure d'entrée Time In | Heure de sortie Time Out | Date Complétée Date complete |
|---------------------|-----------------------------------|---|------------|--------------------------------|-------------------|---------------------|---------------------------|---------------------------|-----------------------------|---------------------------------|
| 1.00 CONT. INIT. | | | | | | | | | | |
| 2.00 Degrease | | | | | | | | | | |
| 3.00 PREPARING | COMPTAGE | | | | | | | | | |
| 4.00 PREHEAT 1 | 529°C | 0:30 | air | | | 701 | | | | |

METCOR INC.
560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC, J7R 5A8
 Tel: 450-473-1884 / Fax: 450-491-5498

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CLIENT / customer **215**

DART AEROSPACE
 1270 ABERDEEN
 HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE
 1270 ABERDEEN
 HAWKESBURY

ON K6A 1K7

| Operation | Temp. spécifiée Specified Temp | Temps de trempe Spécifié Specified Soak Temp | Atmosphère | Carbone Carbon Potential | Q-Media Q-Temp | Four # Furnace # | Date Départ Start Date | Heure d'entrée Time In | Heure de sortie Time Out | Date Complétée Date complete |
|---------------------|-----------------------------------|---|------------|--------------------------------|-------------------|---------------------|---------------------------|---------------------------|-----------------------------|---------------------------------|
| 5.00 WATER TEM | | | | | | | | | | |
| 6.00 SOL ANNEA | 529°C | 0:35 | AIR | | WATER 32MAX | 701 | | | | |
| 7.00 QUENCHDE | | | | | | | | | | |
| 8.00 WATER TEM | | | | | | | | | | |
| 9.00 PREPARING | | | | | | | | | | |
| 10.00 AGE HARDE | | 96:00 | | | | | | | | |
| 11.00 HARDN INS | | | | | | | | | | |
| 12.00 CONDUCT | | | | | | | | | | |
| 13.00 FINAL INSP | | | | | | | 03-11-2013 | | | 03-11-2013 |

COMMENTAIRES / comments

Le traitement thermique a été fait en utilisant des équipements en conformité avec la spécification demandée.
 Toutes les opérations de traitement thermique ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés.
 Aucun changement ou dérogation n'a été faite par rapport au traitement thermique demandé.
 On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiés.

All the heat treatment processing performed on this order was accomplished using heat treatment equipment compliant with the requested heat treatment specification.

All the heat treatment operations were accomplished in accordance with the requested/required heat treatment specification and all required verifications test have been performed and documented.

No unauthorized changes or deviations to required heat treatment specifications or procedures have been performed.

We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

MAR 12 2013

Isabel

APPROUVÉ / Approved

/ Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client. / We certify that all the information on this report is exact and in accordance with the order requirements.